ICR The Institute of Cancer Research

Postdoctoral fellow - Genomics and Evolutionary Dynamics

Candidate Information

January 2026

The Institute of Cancer Research

About our organisation

We are one of the world's most influential cancer research institutes with an outstanding record of achievement dating back more than 100 years. We are world leaders in identifying cancer genes, discovering cancer drugs and developing precision radiotherapy. Together with our hospital partner The Royal Marsden, we are rated in the top four centres for cancer research and treatment worldwide. As well as being a world-class institute, we are a college of the University of London.

We came second in the league table of university research quality compiled from the Research Excellence Framework (REF 2021). We have charitable status and rely on support from partner organisations, charities, donors and the general public. We have more than 1000 staff and postgraduate students across three sites – in Chelsea and Sutton.

About our Centre

The Centre for Evolution and Cancer (CEC), within the Division of Cancer Biology, is a multidisciplinary centre, comprising around 50 staff dedicated to understanding cancer evolution and leveraging this knowledge for translational benefit. Our interests span early detection through to treatment of metastatic disease. The CEC brings together expertise in evolutionary theory, computational biology and bioinformatics together with cutting-edge research ability in cell and molecular biology to provide a stimulating and creative interdisciplinary environment where new approaches to tackling cancer can thrive.

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About our team

The Genomics and Evolutionary Dynamics team combine molecular and cellular biology together with mathematical and computational modelling to study the evolution of malignancy. We focus on early detection in the gastrointestinal tract, colorectal cancer evolution and treatment response, and pan-cancer genomics. We perform basic research into the biology of the human body in health and disease and translate our findings to improve clinical care of patients affected by cancer.

We are based at the ICR Sutton site within the Centre for Evolution and Cancer, located in the outstanding facilities of the new Centre for Cancer Drug Discovery building. The team is highly experienced in computational biology and mathematical modelling that is closely coupled to biological and clinical data. We are leaders in multi-omic data generation and integration, and using this in-house data together with large publicly available datasets, we apply the principles of evolutionary biology and ecology to understand the natural history of cancer.

You will be joining a highly diverse and interdisciplinary team of about 20 people, consisting of clinicians, biologists, mathematicians and computational scientists.

This is a largely wet-lab based position, where the post-holder will lead the development of a non-invasive genomic biomarker for cancer risk prediction in inflammatory bowel disease (IBD). This builds upon our recently published work in which we showed that detection of genomic field alterations in the IBD bowel at surveillance colonoscopy is predictive of future colorectal cancer (please see: Al Bakir et al, Gut 2025, https://doi.org/10.1136/gutjnl-2024-333353).

Experience of next generation sequencing techniques and associated bioinformatics pipelines for data analysis would be advantageous. Our ideal candidates will have previous interdisciplinary experience, and a strong track record in cancer genomics. Senior scientists will provide full training in new techniques, and support will be available for attending training courses and appropriate academic meetings.

Our mission is to make the discoveries that defeat cancer.

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Our values

The ICR has a highly skilled and committed workforce, with a wide variety of roles, each requiring different skills. But whether you work as a researcher, or work as part of our corporate team, your work and behaviour is underpinned by these six values. They are what bring us together as one team - as 'One ICR'.

Pursuing excellence

We aspire to excellence in everything we do, and aim to be leaders in our field.

Acting with Integrity

We promote an open and honest environment that gives credit and acknowledges mistakes, so that our actions stand up to scrutiny.

Valuing all our people

We value the contribution of all our people, help them reach their full potential, and treat everyone with kindness and respect.

Working together

We collaborate with colleagues and partners to bring together different skills, resources and perspectives.

Leading innovation

We do things differently in ways that no one else has done before, and share the expertise and learning we gain.

Making a difference

We all play our part, doing a little bit more, a little bit better, to help improve the lives of people with cancer.

Our values set out how each of us at the ICR, works together to meet our mission – to make the discoveries that defeat cancer. *They summarise our desired behaviours, attitudes and culture – how we value one another and how we take pride in the work we do, to deliver impact for people with cancer and their loved ones."*

Professor Kristian Helin
Chief Executive

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Job description

Department / division:	Centre for Evolution and Cancer Division of Cancer Biology
Pay grade / staff group:	Postdoctoral Training Fellow
Hours / duration:	Full time (35 hours per week), Monday to Friday. Fixed term contract for 2 years
Reports to:	Dr Annie Baker Prof Trevor Graham
Main purpose of the job:	Perform genomic analysis of samples from patients with inflammatory bowel disease

Duties and responsibilities specific to the role

To work with clinical colleagues to manage collection/retrieval of samples (blood, stool, colonic biopsies) from inflammatory bowel disease (IBD) patients

To perform wet-lab experiments that aim to test if a non-invasive genomic biomarker can be used for cancer risk prediction in IBD, including nucleic acid extraction, NGS library preparation and sequencing.
This could involve one or more of the following:

- Optimisation of existing genomic assays for low input and low purity cfDNA
- Incorporation of multi-omic readouts, for example DNA methylation or fragmentomics
- New assay development for single cell analysis of non-invasive biopsies

To perform bioinformatic analysis on data produced, and work closely with computational colleagues to develop and implement advanced analyses

General duties and responsibilities

To work towards a publication record of the kind that will enhance the lab and Centre's research reputation at national and international level and that will clearly demonstrate originality and scholarship.

To attend and participate in the Centre's academic activities, e.g. laboratory and journal club meetings, research group meetings and weekly seminars.

To make research initiatives and original contributions to the research programme wherever possible and to contribute freely to the team research environment in a manner conducive to the success of the research project as a whole.

To maintain appropriate databases, keeping accurate written and computerised records and to ensure that these records are stored in a secure place and to maintain confidentiality of all electronically stored personal data in line with the provisions of the Data Protection Act.

To prepare reports and scientific publications to disseminate results from the programme of research.

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To keep up to date with specific, clinical and professional issues, in particular developments in the specific subject area.
To undertake literature searches to explore potential research projects and to be able to interpret and present the findings of the literature searches and advise the research teams appropriately regarding potential projects.
To supervise and train where necessary new members of the research team.
To assist in drafting budgets and applications for potential research projects and grants.
Undertake such other duties as may be reasonably expected by the line manager or Head of Department.

General

All staff must ensure that they familiarise themselves with and adhere to any ICR policies that are relevant to their work and that all personal and sensitive personal data is treated with the utmost confidentiality and in line with the General Data Protection Regulations
Any other duties that are consistent with the nature and grade of the post that may be required.
To work in accordance with the ICR's Values.
To promote a safe, healthy and fair environment for people to work, where bullying and harassment will not be tolerated.
This job description is a reflection of the present position and is subject to review and alteration in detail and emphasis in the light of future changes or development.

Workforce Agreement

The ICR has a workforce agreement stating that Postdoctoral Training Fellows can only be employed for up to 7 years as PDTF at the ICR (including previous employment at this level elsewhere).

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Person specification

Education and Knowledge

PhD in molecular biology or other relevant area.	Essential*
MSc in molecular biology or similar	Desirable
Undergraduate degree in biological or quantitative subject.	Essential

**as a minimum requirement candidates must have submitted their thesis by the start date of their employment and awarded their PhD within the six month probationary period*

Skills

Ability to perform NGS experiments	Essential
Good communication skills and the ability to interact effectively with other team members.	Essential
Good observation skills, attention to detail and ability to keep appropriate records.	Essential
Ability to work independently and to demonstrate initiative in planning and designing experiments.	Essential
Good time management skills and a proven ability to organise and prioritise workload to meet deadlines.	Essential
Ability to prepare scientific reports and present data at regular project meetings.	Essential
High level of computer literacy	Essential

Experience

Proven expertise in NGS technologies, for example whole genome sequencing	Essential
Appropriate publication record for level of experience	Essential
Experience of working in a cancer research laboratory	Desirable
Experience in working with patient samples	Desirable
Hands-on experience of nucleic acid extraction from various types of human samples, for example blood, stool or formalin-fixed paraffin-embedded tissue	Desirable
Experience with working in a high performance computing environment, ideally in the context of large-scale analysis of genomic data	Desirable
Experience with bioinformatics tools and platforms for data analysis (e.g., R, Python etc.).	Desirable

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Benefits

We offer a fantastic working environment, great opportunities for career development and the chance to make a real difference to defeat cancer. We aim to recruit and develop the best – the most outstanding scientists and clinicians, and the most talented professional and administrative staff.

The annual leave entitlement for full time employees is 28 days per annum on joining. This will increase by a further day after 2 years' and 5 years' service.

Staff membership to the Universities Superannuation Scheme (USS) is available. The USS is a defined benefit scheme and provides a highly competitive pension scheme with robust benefits. The rate of contributions is determined by USS and details of the costs and benefits of this scheme can be found on their website. If staff are transferring from the NHS, they can opt to remain members of the NHS Pension Scheme.

We offer a range of family friendly benefits such as flexible working, a parents' group, and a maternity mentoring scheme. Other great benefits include interest free loans for discounted season tickets for travel and bicycle purchases, access to the NHS discounts website, a free and confidential Employee Assistance Programme which offers a range of well-being, financial and legal advice services, two staff restaurants, and access to a gym and sporting facilities at our Sutton site.

Further information

You may contact Dr Annie Baker for further information by emailing annie.baker@icr.ac.uk. This job description is a reflection of the current position and is subject to review and alteration in detail and emphasis in the light of future changes or development.